AMENDMENTS TO THE CLAIMS

1. – 43. (previously cancelled)

44. (currently amended) An apparatus, comprising:

at least one seismic sensor deployed on an ocean bottom cable; and

a plurality of sources deployed in a manner structurally independent of the seismic sensors and adapted to provide, to the or each seismic sensor, a positioning signal distinguishable from a seismic survey signal to the seismic sensors concurrently with the seismic survey signal.

45. (previously presented) The apparatus of claim 44, wherein the sources are adapted to provide the positioning signal at a frequency outside the bandwidth of the seismic survey signal.

46. (previously presented) The apparatus of claim 45, wherein the sources are adapted to provide the positioning signal at a frequency above the bandwidth of the seismic survey signal.

47. (previously presented) The apparatus of claim 46, wherein the sources are adapted to provide the positioning signal having a frequency bandwidth.

48. (previously presented) The apparatus of claim 47, wherein the frequency bandwidth is approximately 700 Hz to 2000 Hz.

49. (previously presented) The apparatus of claim 47, wherein the frequency bandwidth is approximately 1500 Hz to 4500 Hz.

50. (previously presented) The apparatus of claim 44, wherein the plurality of sources comprises between two and five sources, inclusive.

51. (previously presented) The apparatus of claim 50, wherein the plurality of sources comprises three sources.

52. (previously presented) The apparatus of claim 44, wherein the plurality of sources are piezoelectric sources.

53. (previously presented) The apparatus of claim 44, further comprising a signal processing unit adapted to determine the position of the seismic sensors from the received positioning signal.

54. (previously presented) The apparatus of claim 53, wherein the signal processing unit is adapted to determine the position of the seismic sensors using a plurality of propagation times from the plurality of sources to the at least one seismic sensor.

55. (previously presented) The apparatus of claim 54, wherein the signal processing unit is adapted to determine the position of the seismic sensors by triangulation using the plurality of propagation times from the plurality of sources to the at least one seismic sensor.

56. (previously presented) An apparatus, comprising:

at least one seismic sensor deployed on a sea bed; and

a plurality of sources adapted to provide to the seismic sensors a positioning signal distinguishable from a seismic survey signal concurrently with the seismic survey signal.

57. (previously presented) The apparatus of claim 56, wherein the sources are adapted to provide the positioning signal at a frequency outside the bandwidth of the seismic survey signal.

58. (previously presented) The apparatus of claim 57, wherein the sources are adapted to provide the positioning signal at a frequency above the bandwidth of the seismic survey signal.

59. (previously presented) The apparatus of claim 58, wherein the sources are adapted to provide the positioning signal having a frequency bandwidth.

60. (previously presented) The apparatus of claim 59, wherein the frequency bandwidth range is approximately 700 Hz to 2000 Hz.

61. (previously presented) The apparatus of claim 60, wherein the frequency bandwidth range is approximately 1500 Hz to 4500 Hz.

62. (currently amended) A method for determining a position of at least one seismic sensor deployed on an ocean bottom cable and capable of receiving a seismic survey signal, comprising:

transmitting a plurality of positioning signals from a plurality of sources deployed in a manner that is structurally independent of the seismic sensors, the positioning signals being distinguishable from the seismic survey signal;

receiving the positioning signals at the seismic sensors concurrently with the seismic survey signal; and

determining the position of the seismic sensors from the received positioning signals.

63. (previously presented) The method of claim 62, wherein transmitting the plurality of positioning signals comprises transmitting the positioning signals at a frequency outside the bandwidth of the seismic survey signal.

64. (previously presented) The method of claim 63, wherein transmitting the plurality of positioning signals comprises transmitting the positioning signals at a frequency above the bandwidth of the seismic survey signal.

65. (previously presented) The method of claim 62, wherein determining the position of the seismic sensors using the received signals comprises determining a plurality of propagation times from the sources to the seismic sensors using the received signals.

66. (previously presented) The method of claim 65, wherein determining the position of the seismic sensors comprises determining the position of the seismic sensors using the plurality of propagation times.

67. (previously presented) The method of claim 66, wherein determining the position of the seismic sensors using the plurality of propagation times comprises determining the position of the sensors by triangulation using the plurality of propagation times.

68. (previously presented) A method, comprising:

transmitting a plurality of positioning signals from a plurality of sources, the positioning signals being distinguishable from the seismic survey signal;

receiving, concurrently with the seismic survey signal, the positioning signals at a plurality of seismic sensors deployed on a sea bed; and

determining the position of the seismic sensors from the received positioning signals.

69. (previously presented) The method of claim 68, wherein transmitting the plurality of positioning signals comprises transmitting the positioning signals at a frequency outside the bandwidth of the seismic survey signal.

70. (previously presented) The method of claim 69, wherein determining the position of the seismic sensors using the received signals comprises determining a plurality of propagation times from the sources to the seismic sensors using the received signals.

71. (currently amended) A system, comprising:

a vessel;

an ocean bottom seismic cable having at least one seismic sensor capable of receiving a seismic survey signal concurrently with a positioning signal that is distinguishable from the seismic survey signal, wherein the seismic cable is deployed from the vessel;

a plurality of buoys;

a plurality of sources adapted to provide the positioning signal, at least one source being suspended beneath the survey vessel and the remainder being deployed on the buoys; and

a signal processing unit adapted to determine the position of the seismic sensors from the received positioning signals.

72. (previously presented) The system of claim 71, wherein the buoys are autonomous self-propelled buoys.

73. (previously presented) The system of claim 71, wherein the buoys are towed behind the survey vessel.

74. (not presented)

75. (currently amended) A system, comprising:

at least one seismic sensor deployed on an ocean bottom cable and capable of receiving a seismic survey signal concurrently with a positioning signal that is distinguishable from the seismic survey signal;

a plurality of autonomous self-propelled buoys; and

a plurality of sources coupled to the self-propelled autonomous buoys, the sources being adapted to provide the positioning signal.

76. (previously presented) The system of claim 75, wherein the sources are suspended beneath the autonomous self-propelled buoys.

77. (previously presented) The system of claim 75, further comprising a signal processing unit adapted to determine the position of the seismic sensors using the received positioning signals.

78. (currently canceled)

79. (currently amended) A system, comprising:

a first vessel;

an ocean bottom seismic cable having at least one seismic sensor capable of receiving a seismic survey signal concurrently with a positioning signal that is distinguishable from the seismic survey signal, wherein the seismic cable is deployed from the first vessel;

a second vessel;

a plurality of buoys;

a plurality of sources adapted to provide a positioning signal, at least one source being coupled to the first vessel, at least one source being coupled to the second vessel, and the remainder being deployed on the buoys; and

a signal processing unit adapted to determine the position of the seismic sensors from the received positioning signals.

80. (previously presented) The system of claim 79, wherein at least a portion of the buoys are deployed along a length of the seismic cable.

81. (previously presented) The system of claim 79, further comprising an array of seismic cables having at least one seismic sensor capable of receiving the seismic survey signal.

82. (previously presented) The system of claim 81, wherein at least a portion of the buoys are deployed among the array of seismic cables.